

REMARKS

Claims 1-9 are pending in the present application. Claims 5-9 are withdrawn from consideration. Claims 1-4 are rejected. No new matter has been entered.

Election/Restrictions

Applicants herein confirm their election of method claims 1-4.

Claim Rejections – 35 U.S.C. §103

Claims 1-4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kamikawa et al. (U.S. 6,131,588).

The Examiner asserts that Kamikawa et al. describes a method for cleaning a substrate. The Examiner admits that Kamikawa et al. does not describe that the sliding door 72 is a porous plate wherein a plurality of small holes having a diameter are punched. However, the Examiner asserts that this would be a desired choice to let the drying gas goes through, and therefore it would have been obvious because it would facilitate in keeping the chemicals from the processing bath from entering the drying section, as desired by the process of Kamikawa et al., as the gas flows downward (col. 16, line 35-40) and to clean the substrate with predictable results.

Referring to claim 2, the Examiner concludes that it would have been obvious to stop the supply of the washing solution after the chemical solution has been discharged to start washing the substrate.

Referring to claim 3, the Examiner asserts that the process further preparing the next processing bath during the drying process (claimed discharging the processing solution in the washing section at the same time as the porous plate (or sliding door) is inserted between the washing section and drying section (col. 16, line 38-40).

Applicants respectfully disagree with the rejection because not all of the claimed limitations are taught or suggested by the cited reference, and there is shown no prompting or motivation to modify the cited reference to reach the present invention.

The object of the invention by Kamikawa et al. is found in column 14, lines 24-27, wherein Kamikawa et al. indicates that, "Therefore, it is possible to prevent the chemical in the cleaning bath 41 from exerting bad influences on the drying process of the wafers W".

To accomplish its purpose, in Kamikawa et al. the drying chamber and the cleaning bath are closed from other.

Applicants note that Kamikawa et al. describes in its Abstract that, "a dry process in the drying chamber 42 is accomplished while sealing and closing it by the slide door 72" and in column 11, lines 9-11 as "Subsequently, the O-ring 72c is brought into contact with the surface of the slide door 72 tightly. In this way, the lower opening 62 is closed tightly".

If Kamikawa et al. desired any flow of gas between the drying chamber and the cleaning bath, there would be no need to ensure that the slide door "closed and sealed". Moreover, Kamikawa et al. certainly would not have ensured the presence of an O-ring, the purpose of which is to ensure a seal, rather than encourage leakage.

A drain processing for an organic solvent is necessary at a time of drain process upon mixing an IPA gas with a washing solution. The invention by Kamikawa et al. needs a construction of this kind of drain processing.

On the other hand, in the present invention, the effects obtained by Kamikawa et al. are attained by the following two processes.

- a) A processing solution is discharged from a washing tank
- b) A drying chamber controls flow of gas into a washing tank.

For the present invention, the construction is made without conducting the drain processing.

Accordingly, the present invention is not obvious from Kamikawa et al.

With respect to claim 2, Applicants note that Kamikawa et al. describes in column 9, lines 49-52 that, "The processing liquid collected by the collect bath 47 is adapted so as to circulate in the nozzles 44, 45 through a switching valve 48, a pump 49, a filter 50 and a switching valve 51".

This description means that in Kamikawa et al. a treated solution overflowed from the cleaning bath 41 is circulated and/or drained.

Therefore, Kamikawa et al. always makes a flow of a washing solution at the time of washing a normal semiconductor water so that the washing solution may be congested.

On the other hand, in the present invention a supply of the washing solution is stopped at the time of washing a semiconductor wafer since water brought to standstill (stagnant water) is required in order for a wafer to be raised slowly.

Accordingly, the present invention would not have been obvious over Kamikawa et al.

With regard to Claim 3, the Examiner indicates that, “the process further preparing the next processing bath during the drying process...”

However, in the present invention, a drying gas flows into the washing tank at the time of washing processing. This is because that it is for the purpose of using a discharge port of the washing tank as one of evacuating ports of a drying gas that flows from a porous plate and is not for the purpose of preparing the next processing but for necessitating of discharging the washing solution for the purpose of evacuating gas

Accordingly, the present invention would not have been obvious over Kamikawa et al., because Kamikawa et al. does not disclose the content stated above.

In view of the aforementioned remarks, Applicants submit that the claims are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants’ undersigned attorney to arrange for an interview to expedite the disposition of this case.

Application No. 10/562,967
Attorney Docket No. 053513

Response under 37 C.F.R. §1.111
Response filed June 19, 2009

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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